

# PATENT SPECIFICATION

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## COMPLETE SPECIFICATION

### A Visual Aid for Vehicle Drivers.

We, SOCIETE GLACAUTO, a French Corporate body of 52 rue Marius-Aufan, Levallois (Seine), France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to visual aids for vehicle drivers and particularly to a visual aid for extending the normal field of observation of a vehicle driver. By "normal field of observation" is meant the maximum field of direct vision obtainable when looking ahead of the vehicle and while maintaining a safe driving position.

The invention is particularly applicable in connection with vehicles having high and/or long bonnets, or awkwardly situated driving positions, such that the driver is unable to observe, directly and from a safe driving position, an area of ground in front of the vehicle. The invention enables a driver to be visually warned, particularly when starting the vehicle, of the presence of individuals or obstacles located in front of the vehicle and outside the normal field of observation, without having to move or lean out of the safe driving position. Moreover, the visual aid according to the invention enables a driver to locate the position of a kerb, in relation to the wheels of the vehicle, more accurately than hitherto.

The visual aid can be advantageously installed on tractors or industrial trucks, which are driven in factories amongst relatively bulky stocks of parts, in order to make the manoeuvring of such vehicles safer and easier.

According to the invention there is provided a vehicle including a visual aid for extending the normal field of observation of the vehicle driver, said visual aid comprising a first and second mirror, said first mirror being installed on the vehicle substantially

above the normal field of observation of the vehicle driver and directed to receive light rays reflected from at least a part of the ground area in front of said vehicle and below said normal field of observation, and said second mirror being installed on the vehicle substantially below and adjacent said normal field of observation and directed to receive light rays reflected from said first mirror and reflect said light rays towards the eyes of the driver; whereby the driver is enabled to receive an erect image of said part of the ground area while maintaining a safe driving position.

According to a feature being common to the different possible embodiments, the second mirror is preferably arranged next to and supported by the dashboard of the vehicle.

Embodiments of the invention will now be described, with reference to the accompanying drawings by way of example only. In the drawings:—

Figures 1, 2, and 3 each show diagrammatically one embodiment of the invention.

In Figure 1, a driver is represented sitting in a normal (i.e. safe) driving position in a vehicle and a zone 1 (indicated by hatching lines) is a zone outside the driver's normal field of observation, being hidden from view by parts of the vehicle, particularly the bonnet. A mirror 3, preferably adjustable in position, is installed outside the driving compartment on an extension of the compartment roof, e.g. a sun-visor. Said mirror provides an inverted image of a major part of the ground below zone 1 and also any obstacles located in the vicinity of the front of the vehicle. A reflected image from mirror 3 reaches a second mirror 5, along a path 4, said mirror 5 being mounted on the vehicle dashboard. The further image from the second mirror is reflected towards the eyes of the driver, as shown. The image seen by the driver is thus an erect image of the

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aforesaid major part of the ground below zone 1 together with any obstacles on said major part. As will be appreciated from Figure 1, there will still be a part of zone 1 which is not observed by the driver and said part is indicated by the shaded zone 2. The extent of zone 2 in any particular embodiment will of course depend on the positions of mirrors 3 and 5.

- 10 It is obvious that mirrors 4 and 5 may be of any suitable size, protected against breaking hazards and furthermore arranged in such a way that, in case of accidental breakage, the broken pieces are prevented from injuring the driver. Furthermore, the mirrors may be plane or curved, concave or convex, they may be made in one piece or constituted by a plurality of elementary plane reflectors arranged onto one or several independent supports, the support or supports being possibly free to rotate.

25 The embodiment of Figure 2 is similar to the one described with reference to Figure 1, except that the mirror 3 is installed inside and at the top of the driving compartment, being supported from the compartment roof adjacent the upper edge of the windshield.

30 In the case of Figure 3 the mirror 3 is supported from the roof of the driving compartment and substantially above the driver.

35 It is obvious that, within the scope of the appended claims, modifications may be effected to the embodiments hereabove described. In particular, one at least of said mirrors may be provided with anti-dazzle devices.

#### WHAT WE CLAIM IS:—

- 40 1. A vehicle including a visual aid for extending the normal field of observation of the vehicle driver, said visual aid comprising a first and second mirror, said first mirror being installed on the vehicle substantially above the normal field of observation of the

45 vehicle driver and directed to receive light rays reflected from at least a part of the ground area in front of said vehicle and below said normal field of observation, and said second mirror being installed on the vehicle substantially below and adjacent said normal field of observation and directed to receive light rays reflected from said first mirror and reflect said light rays towards the eyes of the driver: whereby the driver is enabled to receive an erect image of said part of the ground area while maintaining a safe driving position.

2. A vehicle as claimed in claim 1 and including a driving compartment and a dashboard within said compartment, wherein said first mirror is supported by the compartment roof or an extension thereof and said second mirror is supported by said dashboard.

3. A vehicle as claimed in claim 2, wherein said first mirror is supported by a sun visor extending from the compartment roof.

4. A vehicle as claimed in claim 2 and including a windshield, wherein the first mirror is supported inside the driving compartment, in the immediate vicinity of the upper part of the windshield.

5. A vehicle as claimed in claim 2, wherein the first mirror is supported inside the driving compartment and substantially above the driving position.

6. Vehicles including a visual aid for extending the normal field of observation of the vehicle driver substantially as herein described with reference to Figure 1, or Figure 2, or Figure 3 of the accompanying drawings.

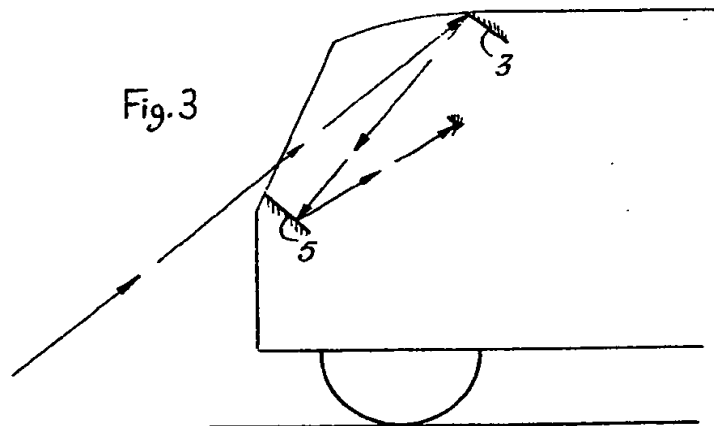
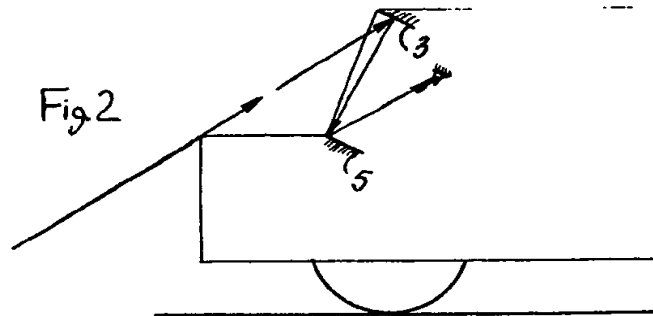
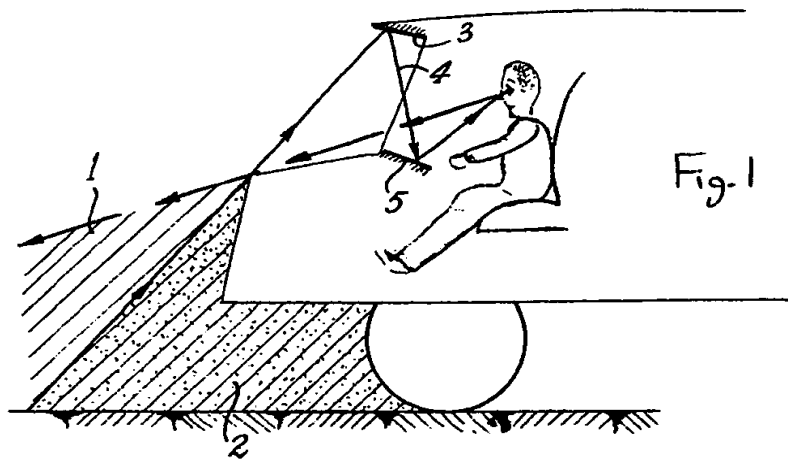
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1 SHEET

COMPLETE SPECIFICATION

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